

PaperCut Payment Gateway Module Nelnet Business Solutions – Commerce Manager Quick Start Guide

This guide is designed to supplement the *Payment Gateway Module* documentation and provides a guide to installing, setting up, and testing the Payment Gateway Module for use with Nelnet's Commerce Manager. The main Payment Gateway Module documentation may be downloaded from:

http://www.papercut.com/anonftp/pub/pcng/ext/payment-gateway/PaymentGatewayModule.pdf

IMPORTANT: You should have an active Commerce Manager deployment with Nelnet Business Solutions before installing the payment gateway module.

Setup and testing time should take around 30 minutes for basic setup, plus time for customizing the order pages if required. No system level restart is required; however the PaperCut application server will be restarted during the install process. If other administrators are using the PaperCut administration interface at this time, it may be advisable to warn them of the pending restart.

This document is written assuming the reader has good server administration skills and is experienced with general PaperCut administration.

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1 Payment Process Workflow

Below is the sequence of events that occurs when a user adds credit to their account using the Nelnet payment gateway:

- 1. User clicks on the Add Credit link and goes to the Add Credit page.
- 2. User chooses the amount they would like to add and clicks on Add Value.
- 3. The user is redirected to the Nelnet hosted payment page to enter their payment details. This URL is configurable as it is site-specific.
- 4. After the user has filled out all the fields and has confirmed payment, she will then be redirected back to the PaperCut user interface. To allow Nelnet to know where to send the user, the **Redirect URL** must be configured.
- 5. PaperCut will verify the authenticity of the redirection from Nelnet (using hashing and a shared secret **Key**), and then display the original Add Credit page with a message at the top indicating either success or failure for the transaction.

2 Commerce Manager Configuration

The payment gateway uses the Commerce Manager option of Private Transaction Processing which provides extra security. There are a number of configuration parameters that must be set up with Nelnet via their Commerce Manager Administrator to support this. Some of these parameters are shared with the payment gateway using its configuration file.

It is recommended to set up PaperCut in a Nelnet testing environment first ("UAT"), then import the configuration into the production environment once it is confirmed working. To configure Nelnet for PaperCut integration:

- 1. Log into the Nelnet Commerce Manager Administrator, testing/UAT site.
- 2. Via Configuration -> Payment Orders , create a new Order Type for PaperCut transactions. The order type is a unique name to distinguish between different order sources and uniquely identify transactions originating from PaperCut.

Edit Order Disable Update **≭** Cancel Order Information User: Commerce Manager Payer PaperCutsandbox Type: Description: Sandbox test site for PaperCut Email payment receipt Make web payer url private (require hash) use default kev C use new key highlight Hash Algorithm: use default (MD5) Order Inventory Rules ? C Allow © Disallow Order Details Display Options | Field Type ☑ Text Order Number: Visible Order Name: □ Visible Text
 ■ Te ☑ Text Order Type: ☐ Visible PaperCutsandbox ✓ Visible Order Description: ☑ Text Sandbox test site for PaperO Editable C Dropdown enter new labe Required E ☑ Text Order Subtype: □ Visible ☐ Visible E Order Due Date Text System Derived Order Amount Due: ☐ Visible Text System Derived E Order Balance: ☐ Visible Text System Derived Order Current Status Amount Due: ☐ Visible Text System Derived ☐ Visible E? Order Current Status Balance: Text System Derived ☑ Text Order Fee: Visible

3. Navigate to the **Edit Order** page for the new order type.

Figure 1 - Screenshot of the Commerce Manager Interface

☑ Text

C Dropdown

4. Enable the option "Make web payer URL private (require hash)".

Editable

Order Amount:

enter new labe

- 5. Select "use new key" and enter a secure password (letters, numbers, characters). This will be shared between Nelnet and PaperCut and used to verify the authenticity of the transaction. Any "unguessable" random text of at least 8 characters is suitable.
- 6. Find the section Transaction Redirect URL and select Allow.
- 7. You will need to know the **NeInet Commerce Manager URL**. For the testing/UAT environment this is generally of the form:

https://uatquikpayasp.com/yourinstitution/commerce_manager/payer.do

Where "yourinstitution" is typically an abbreviated name of your institution and will be consistent with your NBS system deployment name.

When you move from UAT into production, the "uat" prefix is removed from the URL

and becomes:

https://quikpayasp.com/yourinstitution/commerce manager/payer.do

- 8. Find the option Order Details -> Order Amount and ensure the Editable option is disabled and the Field Type is set to Text.
- 9. Via the Configuration -> Allowed Redirects menu on the left-hand side, you need to add a return URL. This table defines the list of URLs that Commerce Manager is allowed to redirect users to after a transaction is completed. You will need to add the URL that returns users to PaperCut, which we call the Commerce Manager Redirect URL. Add in the URL in the top box on the page of the form:

http://papercut.myorg.edu:9191/rpc/gateway/nelnet

where papercut.myorg.edu is the hostname of your PaperCut server. This hostname does not need to be external or resolvable from the internet (i.e. only the user needs to be able to resolve this URL, and not necessarily Nelnet). Then click the **Add** button and it should be added to the list below (see Figure 2 - Screenshot of the Allowed Redirect URLs).

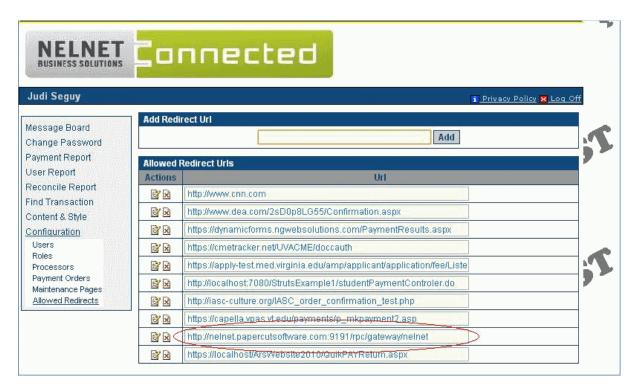


Figure 2 - Screenshot of the Allowed Redirect URLs

3 Installing the Payment Gateway Module

- 1. The Payment Gateway Module will function during the PaperCut NG 40 day trial period. After this, the module must be licensed. If you have been supplied with a new license take the time to install this now. The license install procedure is documented in the PaperCut user manual chapter 'Licensing and Support'.
- 2. Download the Payment Gateway Module from the PaperCut website at

http://www.papercut.com/anonftp/pub/pcng/ext/payment-gateway/pcng-paymentgateway-module.exe

3. Install the module into the same directory as PaperCut. This is normally:

```
C:\Program Files\PaperCut NG\
```

4. Open the file:

```
[app-path]\server\lib-ext\ext-payment-gateway-
nelnet.properties
```

in a text editor such as Notepad.

- 5. Locate the line nelnet.enabled=N and change the N to Y. This will enable the Nelnet module.
- 6. Locate the line nelnet.order-type and enter your Commerce Manager Order
- 7. Locate the line nelnet.secret-key and enter your Commerce Manager **Key**.
- 8. Locate the nelnet.hosted-payment-page-url and enter your Nelnet Commerce Manager URL mentioned in stage 2 above. When you are initially doing testing this will be the UAT version and then afterwards you will change it to the production version.
- 9. Locate the nelnet.redirect-page-url and enter your Commerce Manager Redirect URL.
- 10. Configure other options in this file as discussed in General Configuration Options in the Payment Gateway Module documentation, or by referring to the comments in the file itself. Options include limits on the amount to transfer, access groups, number of retries allowed before failing, and header and footer html.

You may like to enable a group restriction to limit access to administrators until configuration is complete.

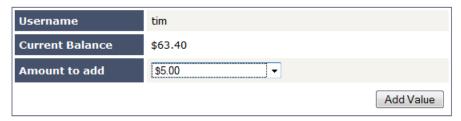
- 11. Save the file and exit the text editor.
- 12. Restart the PaperCut Application Server service via Control Panel -> Administrative Tools -> Services and wait 30 seconds.
- 13. Check the end of the log file at [app-path]\server\logs\server.log for any obvious error messages.

4 Testing

The payment gateway module is now ready for testing. This test will involve performing a transaction with a test credit card number for a test order type and testing end-to-end functionality.

- 1. Ensure your payment gateway configuration is using the UAT version of the **Nelnet** Commerce Manager URL.
- 2. Log into the PaperCut user web interface at http://papercut:9191/user
- 3. A new link called **Add Credit** should be present on the left. Click this link.
- 4. Select an amount to add and click Add Value.

Add credit using Nelnet



- 6. After confirming the credit card information is correct and clicking on the **Confirm** button, you will see the Processing web page before it returns you to PaperCut.
- 7. You should now be back at the Add Credit page. You should see a green message indicating that the funds were added to your account, and Current Balance should show your new account balance. The Transaction History page should contain the payment transaction.

5 Security

The payment gateway system uses two URLs, one for redirection to Nelnet's Commerce Manager payment page and another URL to redirect one back to the PaperCut payment gateway page. In order to maintain security and prevent the user from forging the payment URLs, the URLs are appended with an MD5 Hash value calculated using the parameters and a shared secret key. The shared secret key is akin to a password which is shared between Nelnet's Commerce Manager system and the PaperCut payment gateway system. As part of verification, this hash is recalculated on the parameters with the secret key and compared to the hash value given in the URL.

Also as an added level of security, one of the parameters is a time stamp. For the first URL, this is the time stamp taken just before we redirect to Commerce Manager and for the second URL, this is the time stamp set by Commerce Manager before it redirects back to PaperCut. As part of verification for the initial request, the time stamp is checked by Commerce Manager to be within 5 minutes of it arriving. And as part of verification for the return redirection, the time stamp is checked by PaperCut to see if it is within the time window specified by the configuration parameter of nelnet.timeout-window-secs which has a default value of 300 seconds (5 minutes).

6 Go-Live

If a group restriction was enabled in Stage 3 it can now be removed or altered to allow access to end-users.

In order to go live, you need to move from the User Acceptance Testing environment (UAT) and into the production environment (PROD). To do this requires the following steps:

In the Commerce Manager:

- 1. Import the configuration from the UAT and into the PROD.
- 2. Set up the new PROD shared secret Key.
- 3. Add the PaperCut gateway **Redirect URL** to the "Allow Redirects" list in the PROD.

In the PaperCut payment gateway properties file:

- 4. Update the **NeInet Commerce Manager URL** to be the PROD version.
- 5. Update the shared secret **Key** to be a more secure version that matches what was chosen for the PROD.

Your system is now live and will accept and charge credit cards. We recommend testing the live system with a real credit card to ensure it is functioning correctly. You may be able to void/refund the transaction from Commerce Manager afterwards.

7 Troubleshooting

Administrators may find information in the following log files useful when trying to troubleshoot setup/configuration problems or issues reported by end-users.

Payment Gateway Event Log:

[app-path]\server\logs\payment-gateway\event.log

This log contains gateway specific error messages and events.

Application Log:

[app-path]\server\logs\server.log

This log contains general application specific error messages and events.

Transaction Log:

[app-path]\server\logs\payment-gateway\transaction.log

This log contains a list of successful transactions in a tab-delimited form.

In particular, it may be possible that after the user has confirmed their payment on the Nelnet site, that due to some failure, (s)he is not redirected back to the PaperCut payment gateway page and therefore, the amount has been deducted from the credit card but not been added to the PaperCut balance. To reconcile these differences one would compare the gateway transaction log (specified above) with Nelnet's Commerce Manager payment reports. To look at the details of the Nelnet transactions click on the Overall link (as shown in the figure 2 below).

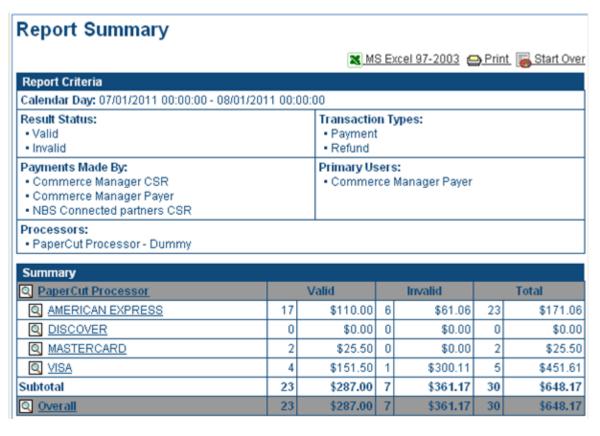


Figure 3 - Transaction Report Summary - click on "Overall" for details

Report Results

NOTE: Invalid transactions are identified by the "Invalid Transaction" icon next to the confirmation number.

Print Start Over Lack to Summary

Download Options 🧖

- MS Excel 97-2003 Download a list of the transactions displayed on the current report page.
- [III] Get All (basic MS Excel 97-2003) Download a tab-delimited file with basic transaction info.
- IIII Get All (detailed MS Excel 97-2003) Download a tab-delimited file with detailed transaction info.

Overall Results										
Detail	Confirm Number	Date (CST)	Amount (\$)	Payment Method	Account Number	Account	Actual Payer			
Q	1615	07/04/11 1:54 AM	0.50	MASTERCARD		Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1619	07/04/11 1:58 AM	25.00	MASTERCARD	1234	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1641	07/07/11 3:13 AM	121.50	VISA		Sandbox test site for PaperCut	Commerce Manager Payer			
Q	8 1643	07/07/11 3:17 AM	300.11	VISA		Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1647	07/07/11 3:37 AM	10.00	AMERICAN EXPRESS	tim1310026816352	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1649	07/07/11 4:14 AM	16.00	AMERICAN EXPRESS	tim1310026816353	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1669	07/07/11 8:58 PM	5.00	AMERICAN EXPRESS	tim1310031576280	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1671	07/08/11 3:18 AM	5.00	AMERICAN EXPRESS	tim1310112953323	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1673	07/08/11 4:00 AM	10.00	AMERICAN EXPRESS	tim1310115416268	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1675	07/08/11 4:13 AM	2.00	AMERICAN EXPRESS	tim1310115416269	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1677	07/08/11 4:34 AM	5.00	AMERICAN EXPRESS	tim1310117591427	Sandbox test site for PaperCut	Commerce Manager Payer			
Q	1679	07/08/11 4:37 AM	5.00	AMERICAN EXPRESS	tim1310117591428	Sandbox test site for PaperCut	Commerce Manager Payer			
		07/09/11		AMERICAN		Sandhov taet	Commerce			

Figure 4 - Report drill down after clicking on "Overall" link.

This will take the user to the Report Results and from there one can download the report in CSV form if desired. Nelnet recommends doing this reconciliation at least once a week to ensure that there is no disconnect with the payments.

Please feel free to contact the PaperCut Software Development Team at support@papercut.com if you require further assistance.